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## Life-events and well-being. A prospective study on changes in well-being of elderly people due to a serious illness event or death of the spouse

Nieboer, Anna Petra

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## Chapter 9

### Summary and discussion

#### 9.1 Introduction

##### 9.1.1 Background

Illness events, such as a congestive heart failure, a myocardial infarction, a stroke, or a hip fracture, frequently have severe consequences for people and their loved ones. To lose someone close through death has an even greater impact on people's lives. These life-events are especially likely to have far-reaching effects on the spouse. In previous studies, illness or death of one's spouse has often been found to result in lowered levels of well-being. In this book, the question has been raised why the impact and adjustment processes due to the loss of the spouse or the loss of functional capacity of the spouse vary so widely between elderly persons. Current explanations of the consequences of illness or death of one's spouse are still very incomplete. This is partly due to the absence of prospective studies with measurements before and briefly after the onset of illness or death of one's spouse. Previous research mainly addressed differences in people's *level of well-being after the event* rather than *changes in well-being due to the event*. So far, the focus has been on the adjustment process, while neglecting the impact of the event.

The present study aimed at making a contribution to existing knowledge on the spousal caregiving and bereavement process by looking at the impact of the event and the subsequent adjustment process. The adjustment process is influenced by the impact of the event. The impact of the event has, until now, not been studied by comparing people's pre-event level of well-being with their well-being briefly after the event occurred. The focus has primarily been on the adjustment process regardless of people's pre-event resources. If pre-event information was available, the time-span between the pre- and post-event measurement varied so widely that it was not possible to accurately describe the impact of the event. My primary goal has been to study impact (short-term) and adjustment (long-term) induced changes in well-being due to illness or death of one's spouse. However, this study does not only distinguish itself from other studies by its prospective research design which enabled me to focus on changes in well-being. The theoretical approach that was used to disentangle the impact and subsequent adjustment processes also differed substantially from earlier approaches.

Most previous studies use the *stress and coping theory* to understand the consequences of the events under study. In this approach, differences in well-being between individuals are explained primarily by differences in adjustment processes that are the result of people's resources, such as income, network relations, and social support, and of people's appraisals of the situation. However, it neglects differences between individuals in the impact of the event. The consequences of specific life-events are not the same for all people. Until now, there has been no theory-guided assessment of the objective meaning of the events in terms of the direct consequences. Such an assessment requires that the specific losses are known. In order to explain changes in well-being, it is

necessary to identify what was lost due to the event and what had to be compensated for. For this purpose, *social production function theory* was used, because it provided the analytical tools to systematically reconstruct the specific losses as a result of the event and, consequently, what had to be compensated for.

The leading research question of this study was as follows:

*Why do the impact and adjustment processes due to the loss of the spouse or the loss of functional capacity of the spouse vary between elderly persons?*

The remainder of this chapter addresses the question of the extent to which the study was successful and what its shortcomings are. First, the theoretical approach and the research design will be discussed. Next, in section 9.2, the research findings of the caregiving and bereavement studies are summarized. In section 9.3, some general conclusions are drawn with regard to life-events and changes in well-being, including suggestions for future research and implications for intervention.

### 9.1.2 Theory

The theory of social production functions is a theory which assumes that people are rational and goal directed while striving for physical and social well-being. People actively seek ways to maintain or improve their life-situation. In striving for this aim, they are resourceful and substitute in the face of loss if they find possibilities to do so. Resourcefulness also means that they attempt to choose activities which they think serve them best. In this process, physical and social well-being are general goals all people strive for. The realization of these so-called universal goals is dependent on the fulfillment of instrumental goals in everyday life. People's resources (e.g., physical functioning, network ties) enable them to engage in more-or-less productive activities. These activities, in turn, result in higher levels of comfort, stimulation, affection, behavioral confirmation, and status. The latter lead to higher levels of physical and social well-being, both of which are necessary to obtain (psychological) well-being.<sup>1</sup> Life-events can have consequences for all levels of the hierarchy (also see Ormel et al., 1997). In fact, the hierarchy of goals suggests that an effect on a lower level has a domino-effect which, eventually, also affects the highest levels of goals. For example, if you fall ill, it disrupts your ability to engage in your usual activities which, in turn, is likely to limit your opportunities to obtain stimulation and behavioral confirmation and will result in lowered levels of physical and social well-being. Consequently, your overall level of psychological well-being will be reduced. The most advantageous feature of the social production function theory is perhaps this hierarchy of goals, which makes it possible to distinguish different levels at which the event affects people's lives. By identifying different levels of goals and by specifying lower level goals as means of

<sup>1</sup> Although physical and social well-being are the ultimate goals people strive for, the top layer of the hierarchy consists of psychological well-being. Psychological well-being is seen as an overall state of well-being that is determined by people's ability to obtain the universal goals, physical and social well-being.

production for the higher level goals, it becomes possible to trace the consequences of life-events for people's well-being.

In this study I have focused primarily on changes in people's activity-patterns and related production capacity. Social production function theory can be applied to assess both people's usual level of well-being as well as changes in well-being due to the occurrence of life-events. Some activities yield more well-being than others because they are multi-functional (i.e., they have more than one higher level goal). For example, one can exercise in order to stay in good condition (i.e., long-term production of comfort) and ask a friend to join in order to achieve a short-term goal of social well-being (in particular affection and behavioral confirmation). People's production capacity is reflected by their productive important life-activities. A life-event will lower the production capacity by disrupting important life-activities. The more productive the activities which are disrupted by the event, the larger the loss.

It is clear from previous research that people's resources influence their level of well-being, also after their spouse falls ill or dies. As argued in Chapter 1, some resources, such as personality characteristics and cognitive capacities, are relatively stable over time, whereas other resources are more prone to change and are therefore more dynamic (e.g., network ties, income, and social support). People's usual or characteristic level of well-being is mainly attributable to their stable personal resources. Life-events, however, primarily influence well-being through their effects on the dynamic personal resources. It is therefore most appropriate to study the consequences of the events under study by looking at more-or-less temporary changes in the dynamic personal resources and well-being. In order to do this, pre-event information of people's resources and well-being is necessary.

Social production function theory was further elaborated with regard to people's *dependency*. Changes in production capacity are determined by the extent to which people's resources and productive activities are dependent on others. Most importantly in this context, people can be more or less dependent on their spouse in their production of physical and social well-being. The more dependent, the higher the deterioration of Ego's production capacity and, as a consequence, Ego's level of well-being. The dependency on the spouse concerning production behavior differs between people, and the well-being will therefore not be altered in the same way for all individuals by the same event. Some couples have activity-patterns that are strongly intertwined, others are much more independent in their activity patterns. The level of pre-event dependency is thus crucial to determine the impact of the event.

In addition to social production function theory, framing theory (Kahneman & Tversky, 1979; Lindenberg, 1994) has been applied. The adjustment process is negatively influenced by a strong *loss-frame*. Loss can seriously affect the ability to react to deteriorations of the quality of one's production functions. In framing theory losses are more important than objectively comparable gains. A frame is the definition of the situation, and a basic distinction is made between gain and loss frames. Because of the asymmetry between gains and losses, even relatively small losses can preoccupy people's attention so much that opportunities for gain and repair are not optimally perceived.

Although in social production function theory people are assumed to be goal-directed and rational, this does not imply that they always make the "best" possible choices available to them. A severe loss-frame negatively influences the rate of adjustment, because it limits their ability to see opportunities for substitution.<sup>2</sup> It was hypothesized that the severity of the loss-frame negatively influences the rate of adjustment at any given time after the event.

Social production function theory guided me in formulating hypotheses on how changes in well-being are mediated by the objective meaning of the event (i.e., the direct consequences) and by changes in the dynamic personal resources. Framing theory helped me to conjecture why some people are better equipped to deal with the event than others. Using these theories, I have tried to find an explanation for inconsistent findings of previous studies and to explain why the impact as well as the rate of adjustment vary so widely between people who experience a similar life-event. In a prospective, empirical study I tested whether the theoretical model explains changes in well-being as a result of serious illness or death of a spouse.

### 9.1.3 Method

In Chapter 3, the research design, the samples, the measurement of the key concepts, and the analytical approach to test the hypotheses were presented. This study is part of a large research program; the Groningen Longitudinal Aging Study. The study population consists of 8723 persons aged 57 and older. These people were on the patient panels of the 27 general practitioners participating in the Morbidity Registration Network Groningen (RNG), which operates in the north of the Netherlands. Useful baseline data are available for 5279 baseline participants. A total of 1356 couples, of which both spouses participated, were monitored for serious illness or death of their spouses, which provided a sample of 2712 eligible baseline participants.

For the *caregiving sample*, the included illness events of the spouse were myocardial infarction, congestive heart failure, stroke, and hip fracture. Follow-up assessment for spousal caregivers occurred at three months and twelve months post-event. The respondent's baseline data were obtained on average 18 months prior to the event. All in all, 180 first occurrences of the selected illness events of the spouse were registered by the general practitioners between March, 1993 and April, 1996. However, 14% of the respondents were excluded from the sample (e.g., due to attrition of Ego or Alter) and 18% of the respondents refused further participation either at baseline or at the first follow-up interview. For the first follow-up, prospective data are thus available for 127 respondents (45 men and 82 women). At the second follow-up, 9% of the respondents of the initial group of 127 refused to participate, two respondents had died between the first and second follow-up, and 10 spouses had died. Respondents whose spouse died between the first and second follow-up enrolled in the bereavement sample. The sample at time 2 therefore consists of 103 respondents.

For the *bereavement sample*, 113 cases were registered by the general practitioners between March, 1993 and March, 1996. Five cases were excluded (because they were

<sup>2</sup> The rate of adjustment refers to people's success in compensating for loss with regard to their activity-patterns, whereby a higher rate means that they have adjusted more rapidly.

already enrolled in another GLAS-substudy or because the events were registered too late) and 15% of the respondents refused further participation either at baseline or when contacted for the first follow-up interview. The bereavement sample therefore includes prospective data on 92 conjugally bereaved respondents (24 men and 68 women). Follow-up assessment of these respondents occurred at three months and thirteen months post-loss. The respondent's baseline data were obtained on average 21 months prior to the loss. At the second follow-up, one respondent had passed away and four respondents refused to participate due to mental or physical health problems. The sample at time 2 thus consists of 87 respondents.

Analyses of the non-response did not reveal large differences, although refusals of the bereavement sample were likely to be older than people who agreed to participate. In addition, refusals of the caregiving sample as well as refusals of the bereavement sample had a smaller pre-event network.

Further descriptive analyses in Chapter 4 described what happened, to whom, and what it meant for the respondents. There were some clear differences between people who enrolled in the caregiving and bereavement sample and the other baseline participants. In particular, with regard to gender and age, people's pre-event personal resources, such as income and education, and their spouse's restrictions (limited physical functioning and high care needs). Women are confronted with their spouse falling ill more often than men, and the older one is, the more likely one's spouse experiences one of the selected illness events. Moreover, conjugally bereaved respondents are also older and more frequently female. There were also some pre-event differences in well-being and the number of productive activities. Conjugally bereaved respondents had a smaller number of productive activities and a lower level of well-being before the loss of their spouse.

In addition, for the caregiving sample, the reduction in well-being of the spouses who experienced the different types of illness events did not differ significantly. However, there were clear differences in the reduction of the spouse's functional capacity, with stroke patients experiencing a larger deterioration. Moreover, respondents who had also experienced another negative life-event underwent a larger reduction in well-being. This effect was not found in the bereavement sample. For the bereavement sample, people who had expected the loss and who had been able to say a last farewell had a smaller reduction in well-being.

## 9.2 Study results

### 9.2.1 Caregiving

The general study distinguished between two basic roles. Ego, the caregiver or bereaved, and Alter, Ego's spouse who fell ill or died. The goal of the caregiver study was to examine the impact of Alter's loss of functional capacity due to a serious illness event on Ego's *production capacity* (i.e., his or her important life-activities), and the extent to which a loss of Ego's production capacity resulted in lowered levels of Ego's well-being. A given loss of Alter's functional capacity due to illness can be expressed in terms of the direct consequences it has for Ego's valued activities, such as volunteer work or club-activities. Indeed, as expected, the more dependent Ego's activities were on interaction with Alter, the greater the reduction in Ego's production capacity. Besides the pre-event dependency, Alter's reduction in functional capacity (or Ego's

increase in care tasks) strongly influenced Ego's ability to engage in important life-activities. The results clearly support the notion that a reduction in Alter's functional capacity results in a loss of Ego's production capacity and therefore a reduction in well-being. Thus, spousal caregivers of myocardial infarction, congestive heart failure, stroke, and hip fracture patients experienced lowered levels of well-being due to the restriction of their own important life-activities (i.e., the loss of production capacity).

The short-term reduction in well-being was larger if people had a strong *loss-frame*. Being caught in a loss-frame can seriously affect Ego's ability to react to the consequences of Alter's illness. As expected, the loss-frame also exacerbated the effect of Ego's loss of production capacity on his or her short-term change in well-being. The intensity of the loss-frame, in turn, was strongly influenced by people's pre-event resources and their pre-event production capacity. People with a higher income, better physical functioning, a larger network, more social support, and more productive activities before the event, were likely to have a weaker loss-frame briefly after the event. The hypothesized effects of people's forewarning of the event and the size of their loss were not supported by the data. The loss-frame was not stronger in case of less forewarning or a larger loss of production capacity.

Both effects (of the production capacity and the loss-frame) were also confirmed by the fact that resources that appeared to have a direct effect on short-term changes in well-being were diminished when Ego's production capacity and the intensity of his or her loss-frame were entered in the equation. For example, a deterioration in Ego's physical functioning between the pre- and post-event measurement resulted in a larger short-term reduction in well-being. This effect dissipated almost completely when Ego's production capacity and the intensity of his or her loss-frame were taken into account.

In previous studies, some other factors have been reported as influential in the caregiving process and they were also investigated in the present study. There was a direct negative effect of gender on caregiver outcome, which remained after controlling for the production capacity and the intensity of the loss-frame. Three months after their spouse fell ill, women had experienced a relatively larger reduction in well-being than men, regardless of the extent to which they lost production capacity. More detailed analyses of gender differences in Chapter 8 revealed that this is mainly attributable to differences in behavioral confirmation of male and female caregivers. Caregiving appears to be more of a source of behavioral confirmation for men than for women.

As for the *long-term consequences*, people clearly varied in their *rate of adjustment*. That rate was influenced by their physical functioning as well as their long-term change in physical functioning. As expected, the rate of adjustment was also lower in case of higher spousal dependency. People who shared more leisure time before the event occurred, had a lower rate of adjustment. However, Ego's socioeconomic, social, and psychological resources did not influence his or her rate of adjustment.

The rate of adjustment, in turn, influenced the *long-term change in well-being*. A higher rate of adjustment makes it more likely that people reach their pre-event level of well-being. Further analyses revealed that it is not so much people's rate of adjustment, but really the extent to which people have maintained their productive activities that explains people's long-term change in well-being. In accordance with the expectations, the effect

of the rate of adjustment on long-term changes in well-being dissipated when the long-term production capacity was controlled for. In addition, there was also some support for the notion that people with more (social) resources selected more productive activities to substitute for losses and, in turn, were more likely to return to their pre-event level of well-being. Still, the long-term production capacity was most important in explaining people's ability to regain their pre-event level of well-being.

Some other factors appeared to influence the long-term change in well-being, namely *Ego's educational level* and *Alter's change in functional capacity*. Even though these factors were only expected to influence the underlying mechanism of the rate of adjustment, they in fact appeared to have a direct positive influence on Ego's long-term change in well-being. It was more likely that Ego would regain the pre-event level of well-being if he or she had a higher educational level and if Alter experienced a smaller reduction in functional capacity over time. The effect of *gender* on the long-term change in well-being dissipated when controlling for the other explanatory factors of the theoretical model. Nevertheless, over time, women are less likely to return to their pre-event level of well-being than men.

### 9.2.2 Conjugal bereavement

The effects of conjugal bereavement are clearly more dramatic than those of one's spouse falling ill. There is a *large short-term reduction in well-being* due to the loss of the spouse. In the bereavement sample, partner-dependent activities, such as visiting or biking, were also far more likely to be disrupted due to the loss than partner-independent activities, such as solving crosswords or reading. The short-term change in well-being was influenced primarily by the extent to which the partner-dependent activities were disrupted.

There were also some other factors that influenced bereavement outcomes, namely Alter's pre-death number of care tasks and the couple's number of conjoint independent activities. If Alter provided care for Ego before he or she passed away, Ego's short-term reduction in well-being was larger. Couples in which both spouses mentioned more partner-independent activities were less vulnerable when one of the spouses passed away. These activities are easier to engage in individually, and this finding confirms again the expectation that the pre-event dependency is an important factor in bereavement outcomes.

In accordance with the research findings of the caregiver study, the intensity of people's *loss-frame* at the first follow-up interview was strongly influenced by people's pre-event resources. In particular, Ego's physical, social, and psychological resources influenced the intensity of his or her loss-frame. The loss-frame was also influenced, although only marginally, by people's forewarning of the bereavement event and their loss of production capacity. If Ego had forewarning of Alter's impending death and a smaller loss of production capacity, the intensity of the loss-frame was weaker. The loss-frame, in turn, clearly influenced Ego's reduction in well-being. A stronger loss-frame resulted in a larger reduction in well-being.

The extent to which Ego had *forewarning* of Alter's impending death did not only influence the intensity of the loss-frame, but it also had a direct positive effect on the short-term change in well-being. More forewarning resulted in a smaller reduction in



well-being. As for Ego's *pre-event resources*, a negative effect of the pre-event level of support on short-term changes in well-being was found. In accordance with the findings of the caregiving sample, the positive effect of Ego's physical functioning on short-term changes in well-being dissipated when the production capacity was entered into the model. Even though I found an *increase in social support* and a small *decrease in physical functioning* in relation to conjugal bereavement, these (changes in) resources were less relevant to understanding the bereavement process than Ego's short-term loss of production capacity and the intensity of his or her loss-frame. Moreover, I did not find an age or gender effect on the short-term change in well-being.

As for the *rate of adjustment* after the loss of the spouse, Ego's resources appeared to play a crucial role. People with higher education, better physical functioning, and a larger increase in social support have a higher rate of adjustment. The rate of adjustment, in turn, influenced the long-term change in well-being. One is more likely to reach the pre-loss level of well-being in the case of a high rate of adjustment. Although the bereavement process is really about losses rather than gains, there is some evidence that people substitute for lost activities and that resources are instrumental in this process. Avoiding the loss of one's activities seems to be a far more important predictor of better bereavement outcome than engaging in new activities. People who lose fewer activities are more likely to reach their pre-event level of well-being. As for the caregiving sample, the long-term production capacity was most important in explaining why some people are better able to adjust than others. It is not merely a matter of how many activities they have left. The productivity of their important life-activities, and changes in these activities, were particularly crucial for better bereavement outcomes over time. As expected, the effect of the rate of adjustment on the long-term change in well-being was therefore mediated by the long-term (change in) production capacity, although less completely than in the caregiving sample.

There were also some unexpected direct effects of people's resources on *long-term changes in well-being*. First, there was a positive direct effect of people's change in physical functioning on their ability to regain their pre-loss level of well-being, although this effect dissipated to some extent when the production capacity was entered into the model. Second, people who experienced an increase in social support over time were more likely to reach their pre-event level of well-being. Further analyses revealed that this effect is attributable to former caregivers. The model in which activities play a central role is not as applicable to former caregivers. Social support, rather than activities, appears to play a crucial role in bereavement outcome for those people. Apparently, they have lost many of their valued activities before bereavement and, consequently, need continuing support to maintain their usual level of well-being after the loss of their spouse. The explanatory model for individual variation in changes in well-being is thus especially relevant if people have, not yet, lost most of their important life-activities.

The *loss-frame* also influenced the bereaved's long-term change in well-being. People with a strong loss-frame briefly after bereavement were less likely to regain their pre-event level of well-being over time. In addition, there was a small negative effect of

*gender* on the long-term change in well-being. Women are less likely to reach their pre-event level of well-being than men. Although this finding is in accordance with the expectations, I did not find the expected larger reduction in comfort, stimulation, affection, behavioral confirmation, and the subsequent short-term reduction in well-being for recently bereaved men. These effects have been found in cross-sectional analyses of the GLAS-data (Nieboer et al., 1996; 1997b), but they could not be replicated in the prospective data-set. In all likelihood, this is attributable to the fact that the sample consisted of relatively many conjugally bereaved men who were former caregivers and, therefore, were likely to have already compensated for the loss to some extent before the bereavement event took place. Moreover, the time-frame was perhaps shorter than that required to study short- versus longer term differences in well-being for conjugally bereaved men and women.

### 9.2.3 Caregiving to bereavement transition

One of the goals of the bereavement study was to examine the importance of pre-loss care demands and social support as determinants of well-being in conjugally bereaved elderly. The prospective data with a measurement before and three and thirteen months after bereavement enabled me to predict the effects of caregiving and conjugal bereavement on well-being in a considerably more powerful design than most studies in this area. The results support the notion that caregivers experience lower levels of well-being before the loss of their spouse than non-caregivers, and that the loss of the spouse results in a smaller decrease in well-being for the caregiving than for the non-caregiving elderly. In addition, former care demands are associated with the change in well-being after the loss of the spouse. Conjugally bereaved elderly who had more care tasks before the loss of their spouse also had a smaller reduction in well-being due to the loss.

There are also clear differences in social support for former caregiving versus non-caregiving elderly. Caregivers experience more social support before the loss of the spouse than non-caregivers, and the increase in social support is smaller than for the non-caregiving elderly. Moreover, former care demands are negatively associated with the change in support after the loss of the spouse, that is higher pre-loss care demands result in a smaller increase in support. In spite of this, support appears to be particularly essential for bereaved former caregivers. It is clear from the study results that social support before and after bereavement protects former caregivers in their bereavement process.

## 9.3 Discussion

### 9.3.1 Theory and methodology

Many of the findings are consistent with the *social production function theory* (Lindenberg, 1984a; 1986; 1991; 1992; 1996). This theory appeared to be well-equipped to address interdependencies between family members, the effects these interdependencies have on the objective meaning of the event and, consequently, on changes in well-being. The pre-event *dependency* plays an important role in both caregiving and bereavement outcomes. Impact of and adjustment to the event both depend on the degree to which Ego's (productive) activities were dependent on Alter.

Social production function theory views the restriction of important life-activities as a threat to the individual's ability to achieve physical and social well-being. Lowered levels of well-being, according to this view, are the result when the ability to strive for important goals is impeded. This notion has been confirmed in the present study (see also Williamson & Schulz 1992; 1995). Moreover, social production function theory implies a hierarchy in the different consequences of these events. Many factors that have been mentioned in the literature, for example people's physical functioning, play only a role via their relation to the production capacity and the intensity of the loss-frame. The usual stress and coping models that primarily focus on the adjustment processes should, at the least, be extended by (1) incorporating activity restriction as an important mechanism in caregiving and bereavement outcomes, (2) differentiating between activities with regard to their productivity for well-being, and (3) distinguishing different hierarchical levels at which the events influence people's lives.

The focus on activity restriction neglects other factors influencing well-being, such as the quality of the marital relationship. This does not imply that these factors are not relevant to understand the consequences of the loss of the spouse or the loss of functional capacity of the spouse. As argued in Chapter 2, having a spouse does not only enable people to carry out particular activities, but is also a direct source for affection (see van Eijk, 1997). A better relationship would imply a larger loss of endowments if one's spouse passes away. These so-called endowment effects were mostly ignored in this study because they are not particularly helpful in establishing how people's social production functions are intertwined. In order to do so, it is necessary that one looks at the interdependencies in resources. Still, endowment effects could impact on activities indirectly by depressing the mood. There is an important proviso with regard to the role of moods. Depressed mood seems to exacerbate the extent to which the activities will be restricted (also see Ormel et al., 1994). The fact that partner-independent activities are also disrupted due to the events, although to a lesser extent than the partner-dependent activities, supports this notion.

In spite of the confirmation of many of the hypotheses with regard to the caregiving and the bereavement process, the explanatory model worked better for the latter than for the former. The explained variance for the caregiving sample ( $t_1-t_0$ : 25%;  $t_2-t_0$ : 27%) was lower than it was for the bereavement sample ( $t_1-t_0$ : 33%;  $t_2-t_0$ : 47%). This is not necessarily due to differences in the underlying explanatory mechanisms. More likely it is due to the fact that the loss of a spouse has more pronounced effects than illness of one's spouse. In addition, the caregiving sample varied widely with regard to the type of Alter's illness and his or her subsequent changes in functional capacity.

Some methodological limitations of the current study are also noteworthy. First, with regard to people's production capacity, the number of productive important life-activities were used as an indicator. Productive activities were those activities that served more than one instrumental goal (i.e., multi-functional activities). Even though the productivity of activities can be derived from the theory, further validation of this approach is necessary; for example by a validation study in which a panel of experts, independently of each other, rate all activities with regard to their productivity. Second, I did not include a control group. The deterioration of physical functioning of the

samples may partly be caused by aging effects. The incidence of events was distributed across 37 months for the caregiving sample and across 36 months for the bereavement sample. This means that the time-span between the baseline interview and the first follow-up interview after the event differed between individuals. Therefore, the available baseline information was not recent for all respondents. I tried to assess the impact of aging-effects in the analyses by incorporating time since baseline interview, but time-span differences did not seem to play a role in changes in well-being of the caregiving or bereavement sample (see appendix 1).

In sum, in contrast to the large number of cross-sectional studies in the literature, I used a prospective research design which enabled me to examine changes in well-being and resources over time. The social production function theory was put to the test with regard to two types of life-events, namely a serious illness event or loss of the spouse. Despite some limitations of the data, the complementary and theoretically consistent pattern of findings in the caregiving and bereavement samples suggest that the mechanisms I have identified are relatively robust. It is clear from the research findings that not all people are able to regain their pre-event level of well-being. Future research on caregiving and bereavement outcomes over a longer time period would thus be valuable. This would enable us to examine whether these people are in fact able to return to their pre-event level of well-being, or whether their loss will continue to negatively influence their well-being for years to come.

### 9.3.2 Implications for intervention

It seems crucial to distinguish between different life-situations of people before the occurrence of major life-events. If people have many resources and many productive activities, it is important to enhance their opportunities to maintain these means of production for well-being even in the face of loss. In particular, engagement in productive activities is essential to hold on to one's usual level of well-being or, at the least, return to one's pre-event level of well-being more rapidly. For people with few resources and few productive activities, the story is somewhat different. It will be very difficult to enhance someone's participation in productive activities if there are very few opportunities to do so. For example, losing one's eye-sight complicates almost all life-activities and it is difficult to substitute for these losses. As shown for the bereaved former caregivers, who already lost many of their valued activities before the bereavement event, social support is crucial if people do not have the opportunity to engage in productive life-activities. Receiving attention, feeling loved, and getting help with instrumental activities (and especially a combination of these support efforts) do appear to buffer the effects of negative life-events in the absence of other sources for well-being. However, support efforts are not always helpful. If neither Ego nor Alter experienced health problems before the event that required support from others, a high pre-event support score really reflected a high need of support, regardless of one's life-situation. These people are actually more vulnerable in the face of loss. Support from family and friends only appears helpful if health problems or other negative life-events require emotional and instrumental assistance from others.

An important implication of the findings of this study is that interventions should specifically be aimed at enabling people to maintain their important life-activities. For caregivers, in many cases this goal can be achieved without necessarily relinquishing the caregiving role. It may be possible, for example, to identify and facilitate participation in those activities most important to the individual by providing temporary relief from caregiving through professional support services or by allocating caregiving tasks to different family members. Alternatively, interventions could also be targeted toward helping the caregiver redefine the relative importance of different types of activities. Some activities yield more well-being than others. As a consequence, giving up valued activities, such as one's hobbies, is more detrimental to one's well-being than reducing time spent on watching television. To some extent, redefining the relative importance of different types of activities happens naturally when individuals change aspiration levels and adjust them to realistically available opportunities, but this process could be further facilitated through therapeutic intervention based on insights on the productivity of activities. Such an intervention may be all the more helpful since opportunities that are available may not be perceived as such when people are caught in a loss-frame that impedes their ability to identify possibilities for adjustment.

For the bereavement process, it also seems important that people try to continue the activities they engaged in before their spouse passed away. The larger causal impact of production capacity as compared to depressed mood counsels against mood management as a guide to readjustment. Rather than focusing on having shared particular activities with the spouse, it seems important to also consider these activities as sources for well-being that may be enjoyed individually or with other network members. Giving up valued activities to avoid being confronted with happier times seems to be a coping strategy which in fact has far more detrimental consequences than the avoidance of initial negative feelings of loss because you used to share these activities with your spouse. If looking at a sunset reminds you of happy times with your spouse, it may indeed be very painful when you watch a sunset by yourself for the first time. Yet, it is still a beautiful sunset that you as an individual enjoyed, besides sharing it with your spouse. Consequently, dropping all activities that may evoke painful memories makes adjustment to bereavement almost impossible. Helping people to maintain their valued activities thus seems crucial for better bereavement outcomes. Although the validity of these methods will have to await the outcome of focused intervention studies, the findings reported here provide valuable insights on how such intervention research might be focused.